

IN THE CLAIMS

Please cancel claims 14-16 without prejudice or disclaimer. Please add new claims 20-

38. Please amend the remaining claims as follows:

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1. (AMENDED) A method of improving transmission efficiency in a communication system with a layered protocol stack, wherein data packets are processed on an upper protocol layer; the processing is controlled according to at least one timer of the upper protocol layer; the data packets are forwarded to a lower protocol layer for transmission, the transmission is controlled by the lower protocol layer, and the transmission is performed with variable channel access delays, the method comprising:

detecting the start of a transmission by the lower protocol layer;

notifying the upper protocol layer by the lower protocol layer when a transmission is started; and

synchronizing at least one timer of the upper protocol layer according to the notification.

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2. (AMENDED) The method of claim 1, wherein the timer models a round trip time or a back-off time.

3. (AMENDED) A method of improving the transmission efficiency in a communication system with a layered protocol stack, wherein data packets are processed on an upper protocol layer and are forwarded to a lower protocol layer controlling the transmission, transmissions are performed with a channel access delay, and at least one of the layers performs a scheduling of data packets for the transmission, comprising:

scheduling of first data packets for transmission;

detecting a channel access delay on the lower layer;

performing a check is performed to determine whether additional data packets are ready for forwarding to the lower layer at or before the end of the channel access delay;

performing a further scheduling of the first and additional data packets; and

transmitting the data packets according to the further scheduling.

4. (AMENDED) The method of claim 3, wherein the scheduling is performed on the upper layer and a notification of the channel access delay by the lower layer initiates the further scheduling.

5. (AMENDED) The method of claim 3, wherein at least one scheduling is performed on the lower layer.

6. (AMENDED) The method of claim 3, wherein a notification is sent at the start of a transmission or at the end of a delay.
7. (AMENDED) The method of claim 3, wherein a total channel access delay comprises at least two separate components and a notification is sent between the at least two separate components.
8. (AMENDED) The method of claim 7, wherein the channel access delay includes a component of arbitrary length and at least one of a notification and a scheduling is performed before the component of arbitrary length.
9. (AMENDED) The method of claim 3, wherein a scheduling process is finished immediately before the scheduled data packets are transmitted.
10. (AMENDED) The method of claim 3, wherein a notification is a primitive.
11. (AMENDED) The method of claim 3, wherein the lower protocol layer is a medium access control sub-layer of a data link layer.

12. (AMENDED) The method of claim 3, wherein the upper protocol layer is a radio link control sub-layer of a data link layer.

13. (AMENDED) The method of claim 3, wherein the transmission is performed on a channel that can be shared by at least one of a plurality of several users and data flows.

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17. (NEW) A device in a communication system, the communication system having a layered protocol stack, wherein data packets are processed on an upper protocol layer; the processing is controlled according to at least one timer of the upper protocol layer; the data packets are forwarded to a lower protocol layer for transmission, the transmission is controlled by the lower protocol layer, and the transmission is performed with variable channel access delays, the device comprising:

means for detecting the start of a transmission by the lower protocol layer;

means for notifying the upper protocol layer by the lower protocol layer when a transmission is started; and

means for synchronizing at least one timer of the upper protocol layer according to the notification.

18. (NEW) The device of claim 17, comprising at least one of a user equipment and a network node.

19. (NEW) The device of claim 17, wherein the at least one timer is adapted to model at least one of a round trip time and a back-off time.
20. (NEW) The method of claim 1, wherein a notification is sent at the start of a transmission or at the end of a delay.
21. (NEW) The method of claim 1, wherein a total channel access delay comprises at least two separate components and a notification is sent between the at least two separate components.
22. (NEW) The method of claim 21, wherein the channel access delay includes a component of arbitrary length and at least one of a notification and a scheduling is performed before the component of arbitrary length.
23. (NEW) The method of claim 1, wherein a scheduling process is finished immediately before the scheduled data packets are transmitted.
24. (NEW) The method of claim 1, wherein a notification is a primitive.
25. (NEW) The method of claim 1, wherein the lower protocol layer is a medium access control sub-layer of a data link layer.

26. (NEW) The method of claim 1, wherein the upper protocol layer is a radio link control sub-layer of a data link layer.

27. (NEW) The method of claim 1, wherein the transmission is performed on a channel that can be shared by at least one of a plurality of several users and data flows.

AS 28. (NEW) A device for improving the transmission efficiency in a communication system with a layered protocol stack, wherein data packets are processed on an upper protocol layer and are forwarded to a lower protocol layer controlling the transmission, transmissions are performed with a channel access delay, and at least one of the layers performs a scheduling of data packets for the transmission, the device comprising:

means for scheduling of first data packets for transmission;

means for detecting a channel access delay on the lower layer;

means for performing a check is performed to determine whether additional data packets are ready for forwarding to the lower layer at or before the end of the channel access delay;

means for performing a further scheduling of the first and additional data packets; and

means for transmitting the data packets according to the further scheduling.

29. (NEW) The device of claim 28, wherein the scheduling is performed on the upper layer and a notification of the channel access delay by the lower layer initiates the further scheduling.

30. (NEW) The device of claim 28, wherein at least one scheduling is performed on the lower layer.

15 31. (NEW) The device of claim 28, wherein a notification is sent at the start of a transmission or at the end of a delay.

32. (NEW) The device of claim 28, wherein a total channel access delay comprises at least two separate components and a notification is sent between the at least two separate components.

33. (NEW) The device of claim 32, wherein the channel access delay includes a component of arbitrary length and at least one of a notification and a scheduling is performed before the component of arbitrary length.

34. (NEW) The device of claim 32, wherein a scheduling process is finished immediately before the scheduled data packets are transmitted.